PROCEEDINGS OF THE

ENTOMOLOGICAL SOCIETY OF WASHINGTON

VOL. 59 AUGUST 1957 NO. 4

FIVE NEW SPECIES OF GELASTOCORIDAE WITH COMMENTS ON OTHER SPECIES

(HEMIPTERA)

E. L. TODD, *Falls Church, Virginia*

This paper constitutes the results of an examination of more than 3,000 specimens of Gelastocoridae[1] that were not included in the revision of the family (Univ. Kansas Sci. Bul. V. 37 (Pt. 1, No. 11): 277-475, 1955). The number of specimens examined and the disposition of those specimens are presented for each species so that future workers might locate desired material more easily. Records of distribution are presented for all the poorly known species, but for those species that are abundantly represented in collections, the records are given only when they extend the known ranges of the species.

[1]China and Miller (Ann. and Mag. Nat. Hist. ser. 12) 8: 267, 1955, suggest that the Family-Group names should be Galgulidae Billberg, 1820; Galgulinae Billberg, 1820, and Mononychinae, Fieber, 1851. The first two names are based on *Galgulus* Latreille, 1802 (Hist. Crust. Ins. V. 3, p. 253), which is a homonym of *Galgulus* Brisson, 1760 (Ornithologia 1:30, 2:63). The Brisson genera were accepted by Opinion 37 of the International Commission on Zoological Nomenclature and specifically excepted in the Paris action on the invalidation of binary works (*See:* Bull. Zool. Nomenclature 4: 65-66, 1950). Kirkaldy's action (Entomologist 30:258, 1897) in renaming the genus as *Gelastocoris* and changing the family name to Gelastocoridae was therefore correct. Thus Gelastocorinae Champion (Biol. Centr. Amer., Hemiptera Heteroptera V. 2, p. 437, 1901), is the proper name for the typical subfamily. Technically, Mononychinae Fieber, 1851, is the correct name for the other subfamily, but in fact, the stem based on *Mononychus* Schüppel (*in* Germar, Ins. Spec. nov., p. 241, 1824), has been used in the formation of Family-Group names in Coleoptera. When Family-Group names are homonyms of each other, the recommendation of the Copenhagen Colloqium is that the case be submitted to the International Commission, which body will cause one of the two names to be changed slightly. In this instance, however, it seems to me that a more satisfactory adjustment may be accomplished through the use of Nethrinae Kirkaldy, (Trans. Amer. Ent. Soc. 32: 149, 1906). I have used that name in my previous papers and accordingly continue its usage in this paper.

In connection with the preoccupation of *Galgulus* Latreille by *Galgulus Brisson*, a question has been raised concerning my use (Univ. Kansas Sci. Bul. 37 (Pt. 1, No. 11): 288, line 18, 1955,) of Pliny as author of *Galgulus* [Aves]. The sentence is poorly worded and should be modified to read as follows: Dumeril (Mem. Acad. Sci. l'Inst. Imp. France, 1860, 31 (2): 1040) considered *Galgulus* [Insecta] to be preoccupied by *Galgulus* [Aves], but he credited the names to Fabricius and Pliny rather than to Latreille and Brisson.

I am extremely grateful to the following individuals and institutions for the privilege of studying specimens from their personal collections or collections in their charge. For the sake of brevity, institutional names and private collections are referred to in the body of this paper by the letters, names of cities, or names of individuals placed in parentheses in the following list. R. I. Sailer, United States National Museum, (USNM); M. A. Cazier, American Museum of Natural History, (AMNH); W. E. China, British Museum (Natural History), (BMNH); E. S. Ross, California Academy of Sciences at San Francisco, (CAS); F. S. Truxal, Los Angeles County Museum, (LACM); E. Handschin, Naturhistorisches Museum, Basel, Switzerland, (Basel); M. Beier, Naturhistorisches Museum, Wien, Austria, (Wien); H. C. Blöte, Rijksmuseum van Natuurlijke Historie, Leiden, Netherlands, (Leiden); Eva Halaszfy, Musee d'Historie Naturelle de la Hongrie, Budapest, Hungary, (Budapest); J. C. M. Carvalho, Museu Nacional, Rio de Janeiro, Brazil, (NMB); R. L. Usinger, Berkeley, Calif. (Usinger Coll.); C. J. Drake, U.S.N.M., Washington, D. C., (Drake Coll.); J. C. Lutz, Philadelphia, Pa. (Lutz Coll.); G. F. Knowlton, Utah State Agricultural College, Logan, Utah, (Utah St.); H. P. Chandler, Red Bluff, Calif. (Chandler Coll.), and G. Kruzeman, Zoologisch Museum, Amsterdam, Netherlands, (Amsterdam). My special thanks go to H. B. Hungerford who permitted me to examine all recent accessions of Gelastocoridae of the Francis Huntington Snow Entomological Collection, University of Kansas, (KU), and who obtained through other sources much of the other material on which this study is based.

GELASTOCORINAE Champion, 1901

Gelastocoris rotundatus Champion

Biol. Centr.-Amer., Rhynchota Heteroptera, V. 2, p. 347, 1901.

Number of specimens examined.—44 (USNM 15, AMNH 11, KU 6, Usinger Coll. 8, and Drake Coll. 4).

Distributional data.—The eight specimens in the Usinger collection are from San Bernardino Co., Calif. These are the only specimens that I have seen from that State, but there are reports in the literature of its occurrence there.

Gelastocoris bufo (Herrich-Schäffer)

Die Wanzenartigen Insecten V. 5, p. 88, 1839 (1840).

Number of specimens examined.—39 (USNM 30, AMNH 3, KU 1, Leiden 1, and Drake Coll. 4).

Gelastocoris fuscus Martin

Univ. of Kansas Sci. Bul. 18 (4): 364, 1929.

Number of specimens examined.—24 (USNM 7, AMNH 2, KU 1, Leiden 2, Usinger Coll. 1, and Drake Coll. 11).

Distributional data.—Specimens from Bueno Vista, Ichilo (KU); Rurrenabaque, Rio Beni (USNM); and Huachi, Beni (USNM), are

the first I have seen from Bolivia although the species was reported from that country by De Carlo through the description of the synonym *G. martinezi* (Mision de Estud. de Patol. Region. Argentina, 24 (83-84) :97).

Gelastocoris vicinus Champion

Biol. Central-Amer., Rhynchota Heteroptera, V. 2, p. 349, 1901.

Number of specimens examined.—20 (USNM 16, AMNH 1, and Leiden 3).

Gelastocoris viridis Todd

Univ. Kansas Sci. Bul. 37 (Pt. 1, No. 11): 338, 1955.

Number of specimens examined.—3 (USNM 1, AMNH 1, and Drake Coll. 1).

Distributional data.—The two specimens in the collections of the United States National Museum and the American Museum of Natural History are from La Victoria, Montozintla, Chiapas, Mexico. The other specimen is from Union Juarez, Chiapas, Mexico.

Gelastocoris angulatus (Melin).

Zool. Bidrag Fran Uppsala 12: 169, 1929.

Number of specimens examined.—13 (USNM 5, Basel 2, Wien 2, Drake Coll. 3, and BMNH 1).

Distributional data.—These specimens nearly double the number of specimens of this species that I have examined. They are from the following localities. PARAGUAY: Paso-Yobay (Basel), Molinascue (Basel), and S. Bernardino (Wien). BRAZIL: Near Para (USNM), Bahia (USNM), Manaos (USNM), and Santarem (Drake Coll.). BOLIVIA: Ixiamas (USNM), Rurrenabaque, Beni (USNM). BRITISH GUIANA: Kutari Sources (BMNH).

Gelastocoris major Montandon

Ann. de Mus. della R. Univ. di Napoli (n. s.) 3 (10): 2, 1910.

Number of specimens examined.—30 (USNM 23, Leiden 1, and Drake Coll. 6).

Distributional data.—Specimens previously examined were from Panama, Colombia, and Ecuador. The six specimens from the Drake Collection are from Barinitas, Venezuela. The specimen from the collection in Leiden is labeled "Chile."

Gelastocoris hungerfordi Melin.

Zool. Bidrag Fran Uppsala 12: 168, 1929.

Number of specimens examined.—109 (USNM 34, AMNH 10, KU 44, Leiden 2, Wien 1, LACM 1, and Drake Coll. 17).

Distributional data.—This common species, which is widely distributed from Mexico to Colombia, is now recorded from Barinitas, Venezuela (4 specimens in the Drake Collection).

Gelastocoris nebulosus (Guérin-Méneville)

Iconographie du Règne Animal de B. Cuvier, Pt. 7, p. 351, 1844.

Number of specimens examined.—476 (USNM 69, AMNH 8, KU 332, Leiden 28, NMB 11, Wien 1, and Drake Coll. 27).

Distributional data.—Specimens from Kabelstation, Dutch Guiana (Leiden), and Paso de Arriera River, Uruguay (USNM) are the first specimens I have seen from those two countries. Specimens from Argentina (six localities in the KU, Wien, and Drake collections) confirm the reports in the literature of the occurrence of this species in that country.

Gelastocoris peruensis Melin

Zool. Bidrag Fran Uppsala 12: 160, 1929.

Number of specimens examined.—5 (USNM 1 and Drake Coll. 4).

Distributional data.—All the specimens from Peru.

Gelastocoris amazonensis Melin

Zool. Bidrag Fran Uppsala 12: 158, 1929.

Number of specimens examined—1 (Wien).

Distributional data.—This specimen is labeled "Rio Branco, Haseman." It is presumed that the locality refers to the Rio Branco in Amazonas, Brazil, but it could refer to other rivers of that name in other states of Brazil or even of other countries.

Gelastocoris oculatus oculatus (Fabricius)

Supp. Ent. Syst., p. 525, 1798.

Number of specimens examined.—Approximately 1,000 (USNM, approx. 600, AMNH 127, KU 62, Leiden 13, Utah St. 5, Budapest 10, LACM 16, and Drake Coll. 149).

Distributional data.—Specimens from the following localities extend the known range of the typical subspecies to the north and to the south. CANADA: Vancouver, British Columbia (USNM). MEXICO: "L. Cal." (USNM), Truinbo, Baja California (Drake Coll.), Hermosillo, Sonora (AMNH), 6 mi. NE. Meoqui, Chihuahua (AMNH), "Chihuahua" (USNM and Drake Coll.), and Oaxaca (Drake Coll.).

Gelastocoris oculatus variegatus (Guerin-Meneville)

Iconographie due Regne Animal de B. Cuvier, Pt. 7, p. 352, 1844.

Number of specimens examined.—96 (USNM 43, AMNH 7, KU 16, Usinger Coll. 1, and Drake Coll. 29).

NERTHRINAE Kirkaldy, 1906

Nerthra stygica Say

Heteropterous Hemiptera of North America, New Harmony, Indiana, p. 37, 1832.

Number of specimens examined.—10 (USNM 9, and Drake Coll. 1).

Distributional data.—All specimens from Florida.

Nerthra mexicana (Melin)

Zool. Bidrag Fran Uppsala 12: 187, 1929.

Number of specimens examined.—2 (KU and Drake Coll.).

Distributional data.—Both specimens are from Mexico. The localities are El Salto, San Luis Potosi (KU), and "C. Valles" (Drake Coll.).

Nerthra martini Todd

Pan-Pacific Ent. 30: 113, 1954.

Number of specimens examined.—13 (LACM).

Nerthra parvula (Signoret)

Ann. de la Soc. des Ent. de France. 33: 588, 1864.

Number of specimens examined.—32 (USNM 4, KU 11, BMNH 2, and Drake Coll. 15).

Distributional data.—CHILE: Las Brisas, El Canelo, Toulemo, El Manzano, Guayacan (all KU), Valparaiso, and Valparaiso Prov. (USNM and Drake Coll.). The two specimens from the British Museum and two specimens from the Drake Collection are labeled "Chile."

Nerthra raptoria (Fabricius)

Systema Eleutheratorum V. 3 (Systema Rhyngotarum) p. 111, 1803.

Number of specimens examined—12 (Leiden 3, Wien 3, and Drake Coll. 6).

Distributional data.—GUATEMALA: Los Amates (Drake Coll). PANAMA: Gatun (Leiden) and Canal Zone (Leiden). COLOMBIA: "Colombia" (Leiden). DUTCH GUIANA: Kabelstation (Leiden). BRAZIL: Monte Alegre, Para (Drake Coll.) and Rio Grande do Sul (Wien). COUNTRY UNKNOWN: "Rio Branco" (Wien) and "Barinas" (Drake Coll.).

Nerthra ranina (Herrich-Schäffer)

Die Wanzenartigen Insecten V. 9, p. 896, 1853.

Number of specimens examined.—555 (KU 480, BMNH 2, Leiden 9, Basel 1, NMB 7, Wien 19, and Drake Coll. 37).

Nerthra nepaeformis (Fabricius)

Systema Entomologiae V. 2, p. 693, 1775.

Number of specimens examined.—7 (Leiden 4, BMNH 2, and Drake Coll. 1).

Distributional data.—One of the specimens from the collection in Leiden is labeled "Valpariso." If this label refers to Valpariso, Chile, the specimen confirms the reports in the literature of the occurrence of this species in that country.

Nerthra terrestris (Kevan)

Ann. and Mag. Nat. Hist. (ser. 11) 14 (119): 813, 1948.

Number of specimens examined.—14 (KU 1, Leiden 10, Basel 2, and Drake Coll. 1).

Distributional data.—One of the specimens from the collection in Leiden is from Jarugui, Ecuador, and it is the only specimen I have seen from that country. A few other specimens, from the British Museum, have also been examined, but as I failed to record the number at the time of examination, they have not been included above.

Nerthra borealis (Melin)

Zool. Bidrag Fran Uppsala. 12: 179, 1929.

Number of specimens examined.—Approximately 30 (BMNH).

Distributional data.—The specimens are labeled "Surinam, In coffee field" and "Surinam, Around roots of coffee."

Nerthra tenebrosa Todd

Univ. Kansas Sci. Bul. 37 (Pt. 1): 376, 1955.

Number of specimens examined.—6 (BMNH 5, and Amsterdam 1).

Nerthra unicornis (Melin)

Zool. Bidrag Fran Uppsala. 12: 179, 1929.

Number of specimens examined.—3 (Wien).

Nerthra peruviana (Montandon)

Ann. Mus. Nat. Hungarici. 3: 403, 1905.

Number of specimens examined.—7 (KU 6, and Drake Coll. 1).

Nerthra montandoni (Melin)

Zool. Bidrag Fran Uppsala. 12: 195, 1929.

Number of specimens examined.—5 (BMNH 1, and Drake Coll. 4).

Distributional data.—The four specimens in the Drake Collection are from "Los Canales, Naiguata." This locality is presumed to be in the Federal District of Venezuela. The other specimen is from the mountains north of Petare, Venezuela.

Nerthra amplicollis (Stål)

Ofvers. Kongl. Vetensk. Akad. Forhändl. 11: (3): 239, 1854.

Number of specimens examined.—5 (KU 1, BMNH 1, Wien 1, and Drake Coll. 2).

Nerthra ecuadorensis (Melin)

Zool. Bidrag Fran Uppsala. 12: 185, 1929.

Number of specimens examined.—4 (BMNH).

Nerthra rudis (Melin)

Zool. Bidrag Fran Uppsala. 12: 182, 1929.

Number of specimens examined.—2 (BMNH).

Distributional data.—One specimen is from Cachabé, Ecuador. The other is labeled "Mexico."

Nerthra fuscipes (Guérin-Méneville)

Rev. Zool. Trav. Ined. p. 114, 1843.

Number of specimens examined.—15 (Leiden 2, BMNH 7, Drake Coll. 4, and Usinger Coll. 2).

Nerthra hungerfordi Todd

Univ. Kansas Sci. Bul. 37 (Pt. 1): 398, 1955.

Number of specimens examined.—11 (Leiden 10, and BMNH 1).

Nerthra manni Todd

Univ. Kansas Sci. Bul. 37 (Pt. 1): 396, 1955.

Number of specimens examined.—7 (AMNH).

Nerthra praecipua n. sp.

(Fig. 9)

There is a unique female specimen in the Drake Collection, via the Reed Collection, which has been badly damaged by dermestids. The damage consists of loss of the legs, lobes of the ovipositor, parts of the venter of the thorax, part of the head, and most of the internal organs. Even so, the specimen is so distinct from the known species of the New World that it is described as follows.

Size.—Female: Length 8.2 mm., width of pronotum 5.3 mm., width of abdomen 6.0 mm.

Color.—General color reddish-brown. Because of the condition of the specimen cleaning was not attempted. There are some irregular spots of a lighter brown color on the hemelytra, but it is believed that they are the result of the dermestid damage.

Structural characteristics.—Apex of the head excavate; superapical and lateral tubercles present, but very weak and irregular; ocelli absent. Pronotum distinctive, nearly rectangular, short, about one-third width, widest at level of transverse furrow; anterior portion of lateral margin nearly transverse, median portion slightly concave; posterior margin nearly straight, slightly sinuous before bases of hemelytra. Scutellum with lateral and apical elevations. Hemelytra entirely coriaceous, fused together, not extending to end of abdomen, covered with network of indistinct longitudinal and transverse carinae. Connexivum very prominent, strongly serrate. Abdominal sternites symmetrical, last visible sternite projecting posteriorly in median area about as far as the lateral lobes of that sternite.

Distributional data.—Holotype, female, labeled "Chile, Reed Coll."

Location of type.—In the Drake Collection, U.S.N.M., Washington, D. C.

Remarks.—This species will not run in my key to the species of *Nerthra*, as it does not agree with either choice of couplet 4. In the New World two species, *N. williamsi* Todd and *N. americana* (Montandon), resemble it superficially, but differ in that the last visible abdominal sternites of the females are emarginate. The projecting median portion of the last abdominal sternite and general appearance would seem to indicate that this species is most closely related to the species of the *alaticollis* group found in Australia. The fused hemelytra and absence of ocelli will, however, separate it from those species.

Nerthra grandicollis (Germar).

Silbermann's Revue Entomologique V. 5, p. 122, 1837.

Number of specimens examined.—149 (KU 1, Leiden 46, BMNH 79, Basel 2, CAS 1, Wien 8, and Budapest 12).

Nerthra indica (Atkinson).

Jour. Asiatic Soc. Bengal. 57 (Pt. 2), 345, 1888.

Number of specimens examined.—33 (BMNH 29, Leiden 2, and KU 2).

Distributional data.—The specimens from the British Museum are from various localities in Sikkim and Assam, India. The other specimens are labeled "Tonkin, E. le Moult."

Remarks.—The specimens from Tonkin differ slightly in the shape of the lateral margin of the pronotum which appears more like the margin of the pronotum of *N. lobata* (Montandon), but the absence of lateral tumescences on the last visible abdominal sternite of the female and shape of the clasper of the male reveal their relation to *N. indica* (Atkinson).

Nerthra serrata (Montandon).

Ann. Mus. Civique di Storia Nat. Genova 1:365, 1897.

Remarks.—I have yet to see specimens that agree with Montandon's detailed description. The type localities, "Carin Gheeù" and "Carin Chebà," are now known to be in that section of Burma between the Salwin and Sittang rivers, east and northeast of Toungoo.

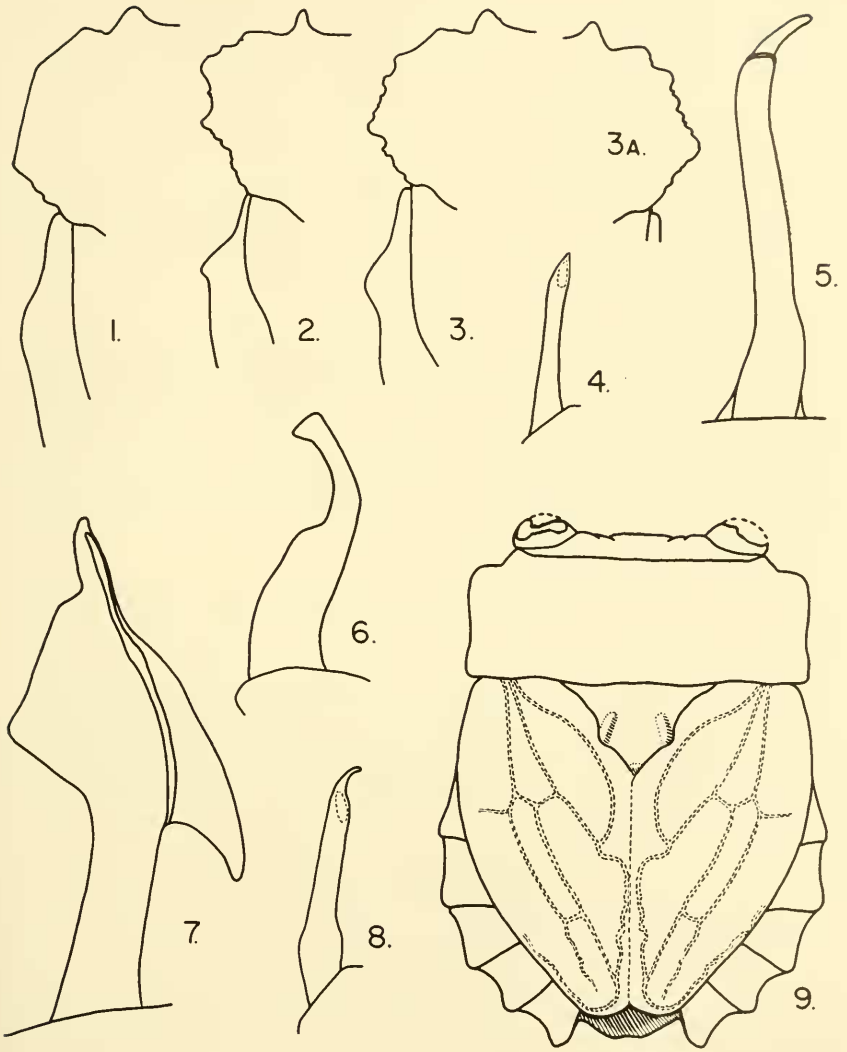
Nerthra unguistyla n. sp.

(Fig. 5)

Size.—Male: Length 9.5 mm., width of pronotum 6.8, width of abdomen 7.0 mm. Female: Length 10.5 mm, width of pronotum 7.5 mm., width of abdomen 8.2 mm.

Color.—Yellowish-brown above, basal halves of abdominal segments of connexivum darker. Abdominal sternites dark brown medially and at the basal one-half laterally. Mesosternal and metasternal processes of thorax dark, nearly black. Legs yellowish-brown, femora faintly ringed with darker brown.

Structural characteristics.—Apex of head with a weak tubercle, not visible from above; frons with a pair of superapical tubercles and a median elevation, none strongly developed; ocelli present. Pronotum widest at level of transverse furrow, not so wide as abdomen; disc very strongly elevated, provided with clumps of black clavate bristles. Lateral margins of pronotum with anterior portions converging toward the eyes; median portions straight, parallel; posterior portions only about one-half as long as median and anterior portions, converging obliquely toward bases of the hemelytra. Posterior margin of pronotum sinuous, concave before scutellum, crossed by five longitudinal carinae in the male and by seven in the female. Scutellum large with small rounded depressions medially and with a strong apical and slight latero-basal elevations, the latter densely covered with black clavate bristles. Hemelytra coriaceous, without membranes; reaching end of



FIGS. 1 to 3, Lateral margin of pronotum and embolium of left side; fig. 3A, lateral margin of pronotum of right side; figs. 4 to 8, ventral view of clasper of male; fig. 9, dorsal view of female. Fig. 1, *Nerthra nieuwenhuisi* n. sp. from Borneo; fig. 2, *N. lobata* (Montandon); figs. 3 and 3A, *N. eximia* n. sp. from Sumatra; fig. 4, *N. annulipes* (Horvath); fig. 5, *N. unguistyla* n. sp. from India; fig. 6, *N. stali* (Montandon); fig. 7, *N. hamata* n. sp. from New Guinea; fig. 8, *N. sinuosa* Todd; fig. 9, *N. praecipua* n. sp. from Chile.

abdomen in the male, but not in the female; basal expansion of embolium broadly triangular. Connexivum prominent in both sexes, but more so in the female. Terminal abdominal sternites of male asymmetrical, rather large; ninth sternite ovate, nearly twice as wide as long; eighth sternite longer than ninth sternite, nearly twice the length of the seventh sternite. Abdominal sternites of female nearly symmetrical; posterior margin of last visible sternite broadly and shallowly emarginate. Lobes of ovipositor produced posteriorly as in *lobata* but shorter and more rounded apically than in that species. Clasper of male nearly straight, tapering apically and terminating in a slightly curved, claw-like process at apex.

Distributional data.—Holotype, male, Mayavaram, South India, October 8, 1945, P. S. Nathan, and allotype, female, Coimbatore, South India, December 18, 1945, P. S. Nathan.

Location of type.—Holotype and allotype in the J. C. Lutz Collection at Philadelphia, Pa.

Remarks.—Because this species lacks membranes of the hemelytra, it will run to couplet 11 in my key to the species of *Nerthra*, but it does not agree with either choice of that couplet. The species clearly belongs to the *grandicollis* group of species, but the absence of membranes of the hemelytra, distinctive clasper of the male, and the shape of the pronotum will separate this species from any of those species that I have assigned to that group.

Nerthra lobata (Montandon).

(Fig. 2)

Bul. Soc. des Sci. de Bucarest-Roumanie 8 (4/5) : 397, 1899.

Number of specimens examined.—21 (Leiden 19, and BMNH 2)

Distributional data.—Previously known from Sumatra and Java, the specimens in the collection of the British Museum extend the known range of this species to the mainland of Asia. These specimens are from Sungai Taban and Kuala Tekis, both located in Pahang, Federated Malay States.

Nerthra asiatica (Horvath).

Termész. Fuzetek 15(3) : 136, 1892.

Number of specimens examined.—1 (Stockholm).

Remarks.—This specimen, a female, is from the same locality (Mou-Pin, Thibet, 1869-70, A. David) as the specimen previously examined by me. It is slightly larger, length 12.2 mm., width of pronotum 8.1 mm., and width of abdomen 8.5 mm.

Nerthra nieuwenhuisi n. sp.

(Fig. 1)

Size.—Female: Length 12.5 mm., width of pronotum 8.5, width of abdomen 8.3 mm.

Color.—Orange-brown above except bristles and scutellum which are black, membranes of hemelytra darker than rest of hemelytra. Abdominal sternites orangish-brown laterally, brown medially. Legs with tibiae and tarsi brown, trochanters and femora yellowish-brown, except apices of femora which are black.

Structural characteristics.—Apex of head rounded, without an apical tubercle; a pair of moderate superapical tubercles present; median tumescence of frons scarcely developed; ocelli present. Pronotum slightly wider than abdomen, widest at level of transverse furrow; disc strongly elevated, posterior portion with seven weak to moderate longitudinal carinae; lateral margin of pronotum distinctive, median and posterior portions nearly straight, converging medially from lateral angle, anterior portion with a dentation at middle; posterior margin of pronotum sinuous, concave before scutellum. Scutellum large, strongly elevated, tumescent laterally and at apex. Hemelytra reaching end of abdomen, but not covering lobes of ovipositor; membrane well-developed; lateral margin of embolium straight at basal one-fourth then expanded to middle, apical one-half of lateral margin nearly straight. Connexivum prominent, broadly expanded, six segments of abdomen visible. Intermediate and hind legs long and slender, the combined length of femur, tibia, and tarsus of hind leg exceeding body length. Abdominal sternites nearly symmetrical; posterior margin of last visible sternite broadly emarginate, caudo-lateral angle of left size of sternite slightly decumbent, lateral tumescences absent. Clumps of short, clavate bristles present on hemelytra and elevations of scutellum.

Distributional data.—Holotype, female, Boven (upper) Mahakkam River, Borneo, 1894, Borneo Exped. Dr. Nieuwenhuis.

Location of type.—In the Rijksmuseum van Natuurlijke Historie, Leiden, Netherlands.

Remarks.—This species will not run in my key to the species of the genus *Nerthra* as it does not agree with either choice of couplet 17. The dilation of the lateral margin of embolium and the posteriorly projecting ovipositor lobes of this large species reveal that it belongs to the *grandicollis* group of species. It is slightly larger than *N. asiatica* (Horvath), from which it may be easily separated by the dilated margin of the embolium, distinctive lateral margin of the pronotum, and proportionally longer hind legs. The size, shape of the lateral dilation of the embolium, and the shape of the lateral margin of the pronotum will separate this species from the other species of the *grandicollis* group.

Nerthra eximia n. sp.

(Fig. 3 and 3A.)

Size.—Female: Length 11.2 mm., width of pronotum 8.0 mm., width of abdomen 7.9 mm.

Color.—Yellowish-brown above except scutellum, basal one-third of each segment of the connexivum, and clumps of bristles, which are dark brown. Abdominal sternites mostly dark brown, but with a contrasting marginal area of orangish-brown. Head, pronotum, and basal segments of legs (trochanters and femora)

yellowish-brown, Tibiae and tarsi of middle and hind legs and tibio-tarsi of front legs dark brown.

Structural characteristics.—Apex of head with a small tubercle, not visible from above; a pair of moderately large tooth-like superapical tubercles present; medial elevation of frons smaller than superapical tubercles; ocelli present. Pronotum widest at level of transverse furrow, only very slightly wider than abdomen; disc strongly elevated, posterior portion crossed by seven weak to moderate longitudinal carinae; lateral margin of pronotum irregularly dentate, the dentations rounded; posterior margin of pronotum sinuous, concave before scutellum. Scutellum large, strongly elevated, tumescent laterally and apically. Hemelytra reaching end of abdomen, but not covering lobes of ovipositor; membrane well-developed; lateral margin of embolium straight at basal one-fourth then roundly expanded about to middle, apical one-half very slightly convex. Connexivum prominent. Clumps of clavate bristles on hemelytra and elevations of the scutellum. Abdominal sternites nearly symmetrical; posterior margin of last visible sternite broadly, triangularly emarginate, slightly decumbent on the left side of sternite at the caudo-lateral angle.

Distributional data.—Holotype, female, "Tanangtaloo, Ophir-Sum., 1915, A. de Kock." This locality is presumably near Mt. Ophir, Sumatra.

Location of type.—In the Rijksmuseum van Natuurlijke Historie, Leiden, Netherlands.

Remarks.—This species, like *N. nieuwenhuisi* n. sp., runs to couplet 17 in my key to the species of *Nerthra*, but does not agree with either choice of that couplet. It is very closely related to the preceding species and may subsequently prove to be but a form of that species, but for the present I prefer to describe it as a separate species. This species agrees with *N. nieuwenhuisi* n. sp. and differs from *N. lobata* (Montandon), the only species previously reported from Sumatra, by the absence of lateral tumescences of the last visible abdominal sternite, by the strongly elevated scutellum, and by the greatest width of the pronotum being at the level of the transverse furrow. It differs from *N. nieuwenhuisi n. sp.* by its smaller size, differently shaped lateral margins of the pronotum, and differently shaped lateral margin of the embolium. It should be pointed-out, however, that the two sides of the pronotum of this specimen are not alike, and therefore differences of the shapes of the lateral margins of the pronota of the two species may not be significant in this instance. The facts that these are insular species and from different islands was another factor in my decision to treat this specimen as a separate species.

Nerthra rugosa (Desjardins)

Ann. Soc. Ent. de France 6:239, 1837.

Number of specimens examined.—1 (BMNH).

Distributional data.—The specimen is labeled "N. G., Hat. Ver., N. Holl." I have been unable to determine the meaning of the label, but

I presume that the "N. Holl." portion probably refers to Australia.

Nerthra macrothorax (Montrouzier)

Ann. des Sciences Phys. et Nat. d'Agr. et d'Indus. [Lyon], 2:110, 1855.

Number of specimens examined.—14 (CAS 2, Leiden 9, BMNH 2, and Wien 1).

Distributional data.—Specimens from the following localities have been examined. New Guinea: Maffin Bay, Dutch New Guinea (CAS); Liki I., near Maffin Bay, Dutch New Guinea (CAS), and "N. O. Kuste" (Wien). Celebes: Gorontalo (Leiden). Philippine Islands: "Philippines" (BMNH). Solomon Islands: Rendova (BMNH). Maratua (or Maratoea) Island: "Maratoea" (Leiden). Tonga Islands: "Tonga Ins." (Leiden). Postilion (or Postiljon) Islands: Sapoeka besar Postiljon Eil. (Leiden). Comoro Islands: "Mayotte" (Leiden). The record from the latter locality, while remote from the others, is not surprising when the distribution of the closely related *N. rugosa* (Desjardins) is considered.

Remarks.—A number of articles relating to the distribution of this species were missed in my previous treatment (Univ. Kansas Sci. Bul. 37(Pt. 1):414, 1955. The articles are as follows: Esaki, Insects of Samoa, pt. II, Hemiptera, fasc. 2, p. 75, 1928; Esaki, Mushi 9:43, 1936; Sonan, Trans. Nat. Hist. Soc. Formosa 24(No. 130.):21, 1934; Ohshima, Japanese Zool. and Bot. 1:410, 1933; Miyamoto, Nymph (Rep. Biol. Club 2nd Branch Kyushu University) 2:35, 1953; Miyamoto, Shin Konchu 7(1/2):28, 29, 1954. Localities recorded in the above papers are as follows: Samoa Islands: Leone Road, Tutuila. Ké (Kei or Key) Islands: Ke Dulan. Caroline Islands: Truk. Kasho to Island. Koto Sho Island. Ryukyu Islands: Yaeyama Group; Kikai Jima Island, Amami Group; Takajimi Island, Tokara Group. Japan: Satano Misaki, Osumi, Kyushu.

Nerthra mixta (Montandon)

Bul. Soc. des Sciences de Bucarest-Roumanie 8(4/5):406, 1899.

Number of specimens examined.—26 (Usinger Coll. 1, Leiden 7, BMNH 6, and Amsterdam 12).

Distributional data.—All the specimens are from localities in New Guinea. Dutch New Guinea: Hollandia (Usinger Coll. and BMNH); Sabron, Cyclops Mts. 930′ (BMNH); Humbolt Bay (BMNH), and "N. New Guinea" (Leiden). North-East New Guinea: Mt. Nomo, S. of Mt. Bongainville (BMNH). Territory of Papua: Ishurava 3000′ (BMNH). The specimens from the Zoologisch Museum in Amsterdam are labeled "Timmena" and "Tamarus." I have been unable to find these localities in the sources available to me.

Nerthra omani Todd

Univ. Kansas Sci. Bul 37(Pt. 1):422, 1955.

Number of specimens examined.—9 (Leiden 2, Wien 1, and BMNH 6).

Distributional data.—This species was previously known only from

Guadalcanal Island in the Solomons. Specimens examined are from the following localities. SOLOMON ISLANDS: Bougainville (Wien); Guadalcanal 5000′ (BMNH), and "British Solomons" (BMNH). NEW GUINEA: "N. Guinea" (Leiden) and "N. New Guinea" (Leiden).

Nerthra macrostyla Todd

Univ. Kansas Sci. Bul. 37(Pt. 1) 428, 1955.

Number of specimens examined.—1 (BMNH).

Distributional data.—The specimen is labeled as follows: "Jack Harbour, Lady Leever Est., Kolombangara, Solomon Islands, April 11, 1934, H. T. Pagden."

Remarks.—This male is larger than the holotype. The measurements are: Length 12.0 mm, width of pronotum 8.0 mm., and width of abdomen 8.0 mm.

Nerthra robusta Todd

Univ. Kansas Sci. Bul. 37(Pt. 1):429, 1955.

Number of specimens examined.—1 (Chandler Coll.).

Distributional data.—This specimen is from the type locality, Nadzab, Markham River Valley, New Guinea.

Nerthra hamata n. sp.

(Fig. 7)

Size.—Male: Length 12.7 mm., width of pronotum 8.7 mm., width of abdomen 8.9 mm.

Color.—Uniformly dark reddish-brown both above and below.

Structural characteristics.—Head with five large, pointed tubercles, four on anterior margin and one at apex, the latter ventrad and slightly caudad of the other tubercles; ocelli present, on rounded elevations. Pronotum moderately expanded, widest at the level of the transverse furrow, but only very slightly wider than at the antero-lateral angle, not so wide as abdomen; anterior and posterior portions of lateral margin converging toward the eye and base of embolium respectively; median portion of lateral margin nearly straight, slightly convergent anteriorly, the two sides subparallel; disc strongly elevated and rugose; posterior third of pronotum crossed by three strong and two weak longitudinal carinae; posterior margin of pronotum concave before scutellum. Scutellum strongly elevated laterally, slightly elevated apically. Hemelytra reaching end of abdomen; membrane well-developed; embolium narrow at base, lateral margin slightly concave basally, broadly convex for apical three-fourths. Connexivum not visible from above. Body covered with short, black, clavate setae, some of which are in clumps on elevations of the scutellum and pronotum, near the antero-lateral angle of pronotum, on the hemelytra at medial angle of embolial suture and another between that and the claval suture. Abdominal sternites asymmetrical, ninth sternite wider than long, moderately large, slightly shorter than eighth sternite, twice as long as seventh sternite, the latter only slightly wider than the ninth sternite, posterior margin of sixth sternite less than one-half width of pos-

terior margin of fourth sternite. Clasper distinctive, very similar to that of *N. robusta* Todd except for the large median thornlike projection of the swollen apical portion of the clasper.

Distributional data.—Holotype, male, Milne Bay, New Guinea, December, 1943, O. H. Graham.

Location of type.—In the collections of the United States National Museum, Washington, D. C.

Remarks.—This species will key to *N. robusta* Todd, but may easily be separated by the presence of the thorn-like projection of the median margin of the clasper.

Nerthra grandis (Montandon)

Bul. Soc. des Sci. de Bucharest-Roumanie 8(6):6, 1900.

Number of specimens examined.—2 (Wien).

Distributional data.—The specimens are labeled "Plason, Australien." I have not been able to find this locality in the sources available to me.

Remarks.—These specimens appear to have a vestige of a membrane and therefore agree with the statement in the original description that the membrane is reduced. The two specimens I had previously examined appeared to have the hemelytra entirely coriaceous.

Nerthra femoralis (Montandon)

Bul. Soc. des Sci. de Bucarest-Roumanie 8(4/5):407, 1899.

Number of specimens examined.—12 (BMNH).

Distributional data.—The specimens are all from Western Australia. The localities are: Yanchep, 32 mi. N. of Perth; Mundaring Weir; and Banbury.

Nerthra luteovaria (Distant)

Ann. Mag. Nat. Hist. (ser. 7) 14:63, 1904.

Number of specimens examined.—1 (BMNH).

Distributional data.—The specimen is from Redlynch, N. Queensland, Australia.

Nerthra sinuosa Todd

(Fig. 8)

Univ. Kansas Sci. Bul. 37(Pt. 1):440, 1955.

Number of specimens examined.—1 (Stockholm).

Distributional data.—This specimen, a male, is from Tolga, Queensland, Australia.

Remarks.—I am tentatively identifying this specimen as *N. sinuosa* Todd, to which it will run in my key to the species of *Nerthra*. It agrees with the females previously described in the nature of the tubercles of the head, the reduction of the membranes of the hemelytra, and the shape of the lateral margin of the embolium, which is straight

or slightly concave basally, the width of the embolium reduced basally. The median portion of the lateral margin of the pronotum is not so strongly concave as in the females. The measurements of the specimen are as follows: Length 7.6 mm.; width of pronotum 5.0 mm., width of abdomen 5.2 mm. The abdominal sternites are asymmetrical, the ninth sternite rather large, wider than long, but nearly as long as the seventh and eighth sternites combined, width distinctly greater than one-half the width of the posterior margin of the right side of the fourth sternite. The clasper is simple, sickle-shaped, the apex somewhat produced, curving mesad.

Nerthra annulipes (Horvath).

(Fig. 4)

Termész. Fuzetek 25:611, 1902.

Number of specimens examined.—2 (Budapest and Drake Coll.).

Distributional data.—The specimen from the Musee d'Historie Naturelle de la Hongrie, Budapest, Hungary, is the type. It is a female from Clarence River, New South Wales, Australia. The other specimen, a male, is from Stanthorpe, Queensland, a locality near the headwaters of the Clarence River.

Remarks.—Through the cooperation of Doctor Eva Halaszfy, I have been permitted to examine the type of this species. Unfortunately, the head and pronotum are missing, but the size and the characters of those parts remaining, especially the embolia, the greatly reduced membranes of the hemelytra, and the dark annulations of the intermediate and hind legs are sufficient to identify the species. The male from Stanthorpe, Queensland, which I now place as this species, agrees with the type in the characters mentioned above. It is smaller than the type, the measurements being as follows. Length 6.9 mm., width of pronotum 4.7 mm., width of abdomen 4.7 mm. The abdominal sternites are asymmetrical, the ninth sternite oval, wider than long, slightly longer than eighth sternite, not so long as length of seventh and eighth combined, width about equal to one-half the width of the posterior margin of the right side of the fourth sternite. The clasper is simple, apex not produced as in *N. sinuosa* Todd. This species will key to *N. sinuosa* Todd, but may be separated by the embolium which is broader basally, the lateral margin being convex. And if I have correctly identified the males of the two species also by the wider pronotum (as wide as abdomen), simple clasper of male (apex not produced mesad) and by the smaller ninth sternite of the male.

Nerthra nudata Todd

Univ. Kansas Sci. Bul. 37 (Pt. 1) 425, 1955.

Number of specimens examined.—6 (Drake Coll.)

Distributional data.—The specimens are from Brisbane, North Pine River, and Ashgrove, all of which are in Queensland, Australia.

Remarks.—The figure number under this name in the original

description has been reversed with that under *N. omani* Todd (loc. cit., p. 422); however, the correct names are assigned to the figure numbers on the "Explanation of Plate XI." The claspers of the specimens now before me (two of the specimens are males) do not agree with my statement in the original description to the effect that a portion of the aedeagal furrow is visible (ventral view) near the apex of the clasper. These specimens do not show any indication of the aedeagal furrow in that area; however, there is a difference in the pigmentation and sclerotization which under low magnification resembles a furrow. Since I do not now have any of the males of the type series available for restudy, I cannot state whether the apparent difference is real or whether I was originally in error. This species is obviously related to *N. annulipes* (Horvath) and *N. sinuosa* Todd, but it may be readily distinguished from those species by its larger size, the almost complete absence of tubercles of the front of the head, and by the well-developed membranes of the hemelytra.

Nerthra tuberculata (Montandon).

Bul. Soc. des Sci. de Bucarest-Roumanie 8(4/5):403, 1899.

Number of specimens examined.—9 (BMNH).

Distributional data.—From Flinders Bay, Western Australia.

Nerthra alaticollis (Stål).

Öfversi. Kongl. Vetensk.-Akad. Förhandl. Arg. 11: 239, 1954.

Number of specimens examined.—13 (BMNH, 4, Leiden 1, and Drake Coll. 8).

Distributional data.—The specimens in the Drake Collection are from Mt. Mee, Brisbane, Stanthorpe, and Caloundra, all in Queensland, Australia. The other specimens are just labeled "Australia."

Remarks.—Some of the specimens have the postero-lateral angle of the pronotum less rounded than others and in this respect resemble *N. stali* (Montandon), but the presence of posterior projections at the caudo-lateral angle of the last visible abdominal sternite of the female and the acuminate clasper of the male will permit its separation from the latter species.

Nerthra stali (Montandon).

(Fig. 6)

Bul. Soc. des Sci. de Bucarest-Roumanie 8(6):5, 1900.

Number of specimens examined.—2 (BMNH).

Distributional data.—The specimens are from Yanchep, 32 miles north of Perth, Western Australia, and "N. H. Swan River."

Remarks.—The specimens, both males, resemble the females but are more elongate. The measurements are as follows: Length 8.4 mm, width of pronotum 6.2 mm., width of abdomen 6.5 mm. The abdominal sternites are asymmetrical. The terminal sternites are small, the ninth sternite subequal to the eighth sternite in length, longer than the

seventh sternite. The clasper, stout basally, recurved, and bluntly knobbed apically.

Nerthra adspersa (Stål).

Berliner Ent. Ztschr. 7:407, 1863.

Number of specimens examined.—2 (BMNH).

Distributional data.—From Quindilup and Yanchep, 32 miles north of Perth, in Western Australia.

Remarks.—These specimens differ considerably in color from the specimen previously studied. One is mostly white with small black maculations, disc of pronotum yellowish-brown; below much darker. The other specimen is more yellowish and with larger maculations. This species will probably prove to be as variable in color as *N. alaticollis* (Stål). The specimens, both females, are also slightly larger than the one previously studied. The measurements are as follows: Length, 6.3 mm, width of pronotum, 5.4 mm, width of abdomen, 5.2 mm.

PERILLUS LUNATUS KNIGHT (HEMIPTERA: PENTATOMIDAE) IN MONTANA

RICHARD C. FROESCHNER, *Montana State College*

The discovery of three Montana specimens of *Perillus lunatus* while organizing the insect collection at Montana State College marks a significant northward extension of range for this species. Although *P. lunatus* was first named from Colorado by Knight in 1952 (Ann. Ent. Soc. Amer. 45:230-231), it was first described by Van Duzee in 1904 (Trans. Amer. Ent. Soc. 30:65-66) as "var. b" of *Perillus exaptus* (Say). Van Duzee there reported this "gaudily marked" form from Colorado and Wyoming. These localities, coupled with the western Montana records listed below and Knight's note "near 7,000 ft.," indicate that this is a mountain form of the northwestern states.

Montana records: Bridger Mts., Gallatin County, July 10, 1926, G. M. Kohls; Bridger Mts., Sacajawea Peak, 7,200 feet, Gallatin County, July 2, 1954, C. V. Davis; Lakeview, Beaverhead County, May 13, 1931.

BOOK NOTICE

Bohart, R. M., and R. C. Bechtel. The Social Wasps of California. Bull. Calif. Insect Survey 4(3):73-102, 1957. Univ. Calif. Press, Berkeley, 75c.

This latest contribution to our knowledge of the California insect fauna treats the 17 species and subspecies of social wasps (Vespinae and Polistinae) known from that state. As is customary in this useful series, there are keys to the genera and species, numerous figures and maps, and an abundance of distributional records.—KARL V. KROMBEIN, *Entomology Research Division, U. S. Department of Agriculture.*